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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/480,837	01/10/2000	STEPHAN GEHRING	INT-99-009	4824

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PULSE-LINK, INC.
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CARLSBAD, CA 92008

EXAMINER

SHAH, CHIRAG G

ART UNIT	PAPER NUMBER
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2616

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/13/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

09/480,837

Applicant(s)

GEHRING ET AL.

Examiner

Chirag G. Shah

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 1/29/07.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 1/29/07 have been fully considered but they are not persuasive.
2. Applicant argues that the Examiner cites new art and revives the section 103 rejection, but continues the same reasoning of mixing of the two references results in an inoperable combination that was rejected by the Panel. Examiner respectfully disagrees. Primarily, the new cited art has no bearing with the Panel Decision held in the past since the art itself was different and the combination did not address all aspect of the claimed subject matter. However, Examiner cites new art, which is relevant and appropriately addresses all the structural elements presented. Examiner respectfully reemphasizes to the Applicant, the claimed subject matter (for example of claim 1) simply provides structure and no practical application. Thus, introducing a second reference with a missing timeslot in a TDMA frame definition is obvious in the art. Furthermore, Examiner provided a logical motivation for adding the missing timeslot, specifically; one is motivated to add the timeslot in order to enable permit precise, deterministic scheduling with reduction in delay and processing time for a reservation-based TDMA protocol.
3. Applicant argues that claims 1, 9, and 20 is directed to claim a network of communication devices, which is a machine, and machines are one of the enumerated statutory invention categories defined in 35 USC 101. Examiner respectfully directs applicant to claims 1, 9, and 20, where no transmission or reception among a master device and plurality of slave devices takes place. Furthermore, merely reciting a multiplicity of ultra wide band signal

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encoded with function descriptive matter such as a network does not fall within any of the categories of patentable subject matter set forth in the 101 Interim Guidelines for statutory subject matter. The claims do not have a practical application by physical transformation or a practical application that produces a useful, tangible and concrete result.

4. Applicant argues that the amended claim 14 now positively recite that the computer program is embodied on a computer readable medium and now recites, in part: "A computer program product located on a computer readable medium for scheduling the assignment of variable length data slots in a network system....". Examiner respectfully disagrees, based on the way the claim is written, the product is directed to a program not a computer readable medium encoded with a program having instructions being executed by a computer. Thus, amended claim 14 remains unpatentable subject matter as set forth in the 101 Interim Guidelines for statutory subject matter.

Applicant continues to argue with respect to the rejection under 35 U.S.C. 112, 1st paragraph as failing to comply with the enablement requirement that based on a network of master and slave devices communicating using UWB signals transmitting a TDMA protocol as illustrated and described in the specification, one skilled in the UWB art could develop and ultra wideband network employing TDMA frames or protocol. Applicant asserts that claims 1-20 are enabled by the originally filled specification. Applicant deems Figs. 1, 2-3b as support such that fig. 1 employs ultra wide band signals to wirelessly communicate using TDMA frame or protocol shown in figs. 2-3b. Examiner respectfully disagrees for several reasons. First of the support as alleged by the Applicant does not suggest enablement nor suggest implementation of communication using TDMA frame comprising multiplicity of UWB signals. Based on the

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alleged support provided, how do you implement UWB network employing TDMA frames? The mere term "could develop" doesn't make it possible to develop ultra wide band network employing TDMA frames. Merely disclosing "Such an illustrative wireless network is synchronous wireless network comprising a plurality of transceiver devices transmitting and receiving pulses using a baseband or "ultra wide band" transport" does not suggest of implementation of the communication using TDMA frame comprising multiplicity of ultra wideband signals. Thus, claims 1-20 remains rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement.

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

7. Claims 1-20 rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The amended specification and the existing specification does not enable one skilled in the art to make and/or use the invention of an ultra wide band network using a TDMA frame format. How does ultra wide band network enable TDMA? In other words, the specification does not describe in such a way to enable how the ultra wide band network implements the TDMA.

Claim Rejections - 35 USC § 101

8. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

9. Claims 1, 9, 14, and 20 rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Regarding claims 1, 9 and 20, Under the Interim Guideline for Examination of Patent Applications for Patent Subject Matter Eligibility, the claims seek for patent protection of a signal. Moreover, it does not appear that claims reciting a multiplicity of ultra wide band signal

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encoded with functional descriptive material falls within any of the categories of patentable subject matter set forth in § 101. The claims do not have a practical application by physical transformation or a practical application that produces a useful, tangible and concrete result.

Regarding claim 14, Under the Interim Guideline for Examination of Patent Applications for Patent Subject Matter Eligibility, the claims seek for patent protection of a signal. Moreover, it does not appear that claims reciting a multiplicity of ultra wide band signal encoded with functional descriptive material falls within any of the categories of patentable subject matter set forth in § 101. In addition, according to ANNEX IV-Computer Readable Nonstatutory Subject Matter section of the Interim Guideline for Examination of Patent Applications for Patent Subject Matter Eligibility, the computer program is not embodied or encoded on a computer read-able medium.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claim 1 rejected under 35 U.S.C. 103(a) as being unpatentable over Aiello et al. (U.S. Patent No. 6,275,544) in view of Hulyalkar (U.S. Patent No. 6,347,084).

Regarding claim 1, 9 and 20, Aiello discloses in **fig. 1 and col. 7, lines 47-67** of an ultra wide band network, comprising:

a master device [**device 12a , fig. 1 and col. 5, lines 45-61**] and a plurality of slave devices [**12b and 12c, see fig. 1 and col. 5, lines 45-61**] in network communication with said

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master device, the communication using a Time Division Multiple Access frame comprising a multiplicity of ultra wide band signals **[the master transceiver performs data transmission between several node devices via a MAC protocol utilizing a TDMA frame definition.**

Under the TDMA architecture, the data transmitted as short RF pulses divided into discrete data frames; see col. 7, lines 47-67];

a Medium Access Control layer protocol for transmission and reception of network packets **[see col. 7, lines 47-67]**, comprising:

a Time Division Multiple Access frame definition **[see fig. 3 and col. 7, lines 47-55]** having a start-of-frame section **[SOF, see col. 7, lines 65-67]**, a command section **[command slot 42, see fig. 3]**, a data slot section containing a plurality of variable length slots **[see col. 8, lines 45-59 and fig. 3]**, a synchronization slot **[master sync code 46, see col. 8, lines 1-21 and fig. 3]**.

Aiello fails to disclose of a TDMA frame including a timestamp slot. Hulyalkar teaches a method of timestamp synchronization that includes a control node (master device) and a plurality of other nodes (slave devices) that are in communication with one another mediated by a MAC subsystem that uses a reservation-based TDMA protocol. Hulyalkar discloses in col. 5, lines 5-17 and col. 9, lines 41-65 and respective portion of the specification to include a control node sending a preset command to slave nodes and it presets their respective timestamp to the prescribed timestamp value. Thus, having a timeslot within a TDMA frame. Therefore, it would have been obvious to one of ordinary skills in the art at the time of the invention to incorporate the teachings of a timestamp timeslot within a TDMA frame as taught by Hulyalkar into Aiello

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invention. One is motivated as such in order to enable permit precise, deterministic scheduling with reduction in delay and processing time for a reservation-based TDMA protocol.

Regarding claim 14, Aiello discloses in **col. 7, lines 47-67 and fig. 1** a computer program product [**framing control function in the master transceiver device 12a**] for scheduling the assignment of variable length data slots in a network system having a master device and a plurality of slave devices in network communication with said master device the network communication using a Time Division Multiple Access frame comprising a multiplicity of ultra wide band signals [**the master transceiver performs data transmission between several node devices via a MAC protocol utilizing a TDMA frame definition. Under the TDMA architecture, the data transmitted as short RF pulses divided into discrete data frames; see col. 7, lines 47-67**], comprising:

providing a Time Division Multiple Access frame definition comprising a synchronization slot and a data slot section having a plurality of variable-length data slots [**a Time Division Multiple Access frame definition (see fig. 3 and col. 7, lines 47-55) having a start-of-frame section (SOF, see col. 7, lines 65-67); command slot 42, see fig. 3, a data slot section containing a plurality of variable length slots (see col. 8, lines 45-59 and fig. 3)], a synchronization slot (master sync code 46, see col. 8, lines 1-21 and fig. 3)**]; and

determining a schedule time to communicate the assignment and reallocation of said variable-length data slots to each of said slave devices [**see col. 8, lines 1-21 and 45-60**].

Aiello fails to disclose of a TDMA frame including a timestamp slot. Hulyalkar teaches a method of timestamp synchronization that includes a control node (master device) and a plurality

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of other nodes (slave devices) that are in communication with one another mediated by a MAC subsystem that uses a reservation-based TDMA protocol. Hulyalkar discloses in col. 5, lines 5-17 and col. 9, lines 41-65 and respective portion of the specification to include a control node sending a preset command to slave nodes and it presets their respective timestamp to the prescribed timestamp value. Thus, having a timeslot within a TDMA frame. Therefore, it would have been obvious to one of ordinary skills in the art at the time of the invention to incorporate the teachings of a timestamp timeslot within a TDMA frame as taught by Hulyalkar into Aiello invention. One is motivated as such in order to enable permit precise, deterministic scheduling with reduction in delay and processing time for a reservation-based TDMA protocol.

Regarding claims 2-4, Aiello discloses in col. 7, lines 47-67 and in col. 8, lines 45-60 wherein the MAC layer protocol is configured to implement dynamic requisition, allocation, and reallocation of variable length data slots within the frame.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chirag G. Shah whose telephone number is 571-272-3144. The examiner can normally be reached on M-F 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wellington Chin can be reached on 571-272-3134. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

cgs

April 6, 2007



Chirag Shah
Primary Examiner

CHIRAG G. SHAH
PRIMARY PATENT EXAMINER